

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of the claims in the application:

### **Listing of Claims:**

#### **CLAIMS**

What is claimed is:

1. (Currently Amended) In an image processing system, a method for relating a first image to a second image comprising:
  - a) aligning the first image with a second image; ~~and~~
  - b) plotting a gray level of a pixel from the first image against a gray level of a corresponding pixel from the second image for all aligned pixel locations; and
  - c) plotting at least a threshold window on a plot created in step (b), wherein an area outside the threshold window indicates a possible defect.
2. (Canceled)
3. (Previously Amended) The method of claim 1 wherein a plot created in (b) is stored in a memory array variable.
4. (Previously Amended) The method of claim 1 wherein a plot created in step (b) is displayed on a video monitor.
5. (Original) A computer-readable medium storing a program for carrying out the method of claim 1.
6. (Original) A computer-readable medium comprising:
  - a plurality of memory locations storing data representing a first image and an associated second image, said first and second images each having a plurality of pixels with each pixel being defined by a location coordinate and a gray level; and,

an array comprising a plurality of memory locations storing data representing a plot of the gray levels of pixels from the first image against the gray levels of corresponding pixels from the second image.

7. (Original) A defect inspection system comprising:

a) an image acquisition unit being operable to acquire a first image and an associated second image, the first and second images each having a plurality of pixels with each pixel being defined by a location coordinate and a gray level;

b) a plurality of memory locations storing data representing the first image and the second image; and,

c) a processor being operable to plot the gray levels of pixels from the first image against the gray levels of corresponding pixels from the second image.